AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (Currently Amended) An apparatus for redundant image encoding, the apparatus comprising:

a slice modeling unit which divides image data of an image into a plurality of regions and determines which of the regions are to be redundantly encoded, and determines one of a plurality of structures ~~a structure~~ for each of a plurality of slices to be used in encoding [[an]] the regions of the image;

a slice allocation unit which allocates each region of the image to at least one of the slices according to the slice structures, wherein the slice allocation unit allocates each of the regions to be redundantly encoded to more than one of the slices;

a picture header encoding unit which encodes picture header information comprising information required to decode encoded slices of the image; and

a slice encoding unit which encodes the allocated image regions into encoded slices according to the picture header information, wherein the slice encoding unit encodes the regions allocated to be redundantly encoded into more than one encoded slice; and

wherein the slice structure corresponds to a shape of each of the plurality of slices.

2. (Previously Presented) The apparatus of claim 1, wherein the slice modeling unit determines that each slice structure comprises a series of macroblocks.

3. (Previously Presented) The apparatus of claim 1, wherein the slice modeling unit divides the image into at least one rectangular first region and a second region and determines the structures of the slices so that each of the first and second regions is included in at least one independent slice.

4. (Previously Presented) The apparatus of claim 1, wherein the slice modeling unit determines that each slice structure comprises a set of macroblocks at certain positions of the image.

5. (Previously Presented) The apparatus of claim 1, wherein the slice modeling unit determines the structures of the slices in which the image data will be encoded to be identical structures.

6. (Previously Presented) The apparatus of claim 1, wherein the slice modeling unit determines the structures of the slices in which the image data will be encoded to be non-identical structures.

7. (Previously Presented) The apparatus of claim 1, wherein the slice modeling unit determines the regions to be redundantly encoded based on regions predetermined by a user as being important regions from the image.

8. (Previously Presented) The apparatus of claim 1, wherein the slice modeling unit determines the regions to be redundantly encoded by detecting regions where motions are actively performed, from the image.

9. (Previously Presented) The apparatus of claim 1, wherein the slice modeling unit determines an amount of the regions to be redundantly encoded according to an error rate and a transmission bandwidth which occur in a transmission environment of the encoded slices, and an encoding efficiency of the slice encoding unit.

10. (Previously Presented) The apparatus of claim 1, wherein the slice modeling unit comprises:

a slice structure modeling portion which determines the structures of the plurality of slices to be used for image encoding; and

a redundant encoding modeling portion which determines positions and amount of the regions to be redundantly encoded from the image using the plurality of slices.

11. (Previously Presented) The apparatus of claim 1, wherein the slice allocation unit determines sizes of the plurality of slices according to an amount of the regions to be redundantly encoded.

12. (Previously Presented) The apparatus of claim 1, wherein the slice allocation unit allocates the image data to the plurality of slices so that each of the slices includes image data of the regions to be redundantly encoded and image data of regions not to be redundantly encoded.

13. (Original) The apparatus of claim 1, wherein the slice allocation unit allocates the image data to the plurality of slices so that at least one slice includes image data of only a region to be redundantly encoded.

14. (Previously Presented) The apparatus of claim 1, wherein the picture header encoding unit encodes the picture header information containing structure, position, and size of each slice.

15. (Previously Presented) The apparatus of claim 1, wherein the slice encoding unit comprises:

a slice header encoding portion which generates for each of the slices a slice header comprising information used to encode macroblocks of the slice according to the picture header information;

a temporal/spatial predictive encoding portion which temporal/spatial predictively encodes the allocated image regions into the encoded slices of the image;

a transform quantization portion which transforms the temporal/spatial predictively-encoded slices into a frequency domain and quantizes data of the transformed slices; and

an entropy-encoding portion which entropy-encodes the quantized data.

16. (Original) The apparatus of claim 15, wherein the slice header includes flag information which indicates whether the slice to be encoded includes only regions to be redundantly encoded.

17. (Canceled)

18. (Previously Presented) The apparatus of claim 1, wherein the slice encoding unit quantizes each of the redundantly-encoded slices at different quantization intervals.

19. (Previously Presented) The apparatus of claim 1, wherein the slice encoding unit encodes only main information containing a macroblock header and a motion vector of the regions to be redundantly encoded in a first slice and encodes all information of the regions to be redundantly encoded in a second slice among two slices including the image data of the region to be redundantly encoded.

20. (Previously Presented) The apparatus of claim 1, wherein the slice encoding unit encodes only main information containing a macroblock header, a motion vector, and a discrete cosine (DC) coefficient contained in a discrete cosine transform (DCT) coefficient of the regions to be redundantly encoded in a first slice and encodes all information of the regions to be redundantly encoded in a second

slice among two slices including the image data of the regions to be redundantly encoded.

21. (Currently Amended) An apparatus for redundant image decoding, the apparatus comprising:

a picture header decoding unit which decodes picture header information comprising information required to decode encoded slices of an image divided into a plurality of regions, wherein at least one of the encoded image slices corresponds to each region of the image, and wherein a plurality of the encoded image slices corresponds to a redundantly encoded region of the image;

a slice construction unit which determines structures and positions of the encoded image slices to be decoded according to the decoded picture header information;

a slice decoding unit which decodes ~~an~~ the encoded image slices according to the decoded picture header information; and

an image construction unit which disposes image data of each decoded slice according to the determined structure and position of the slices and restores and outputs a decoded image;

wherein, when the decoded picture header information for an encoded image slice indicates that the encoded image slice corresponds to redundantly-encoded regions of the image, the slice decoding unit decodes the encoded image slice that corresponds to the redundantly-encoded regions if errors occur in decoding another one of the plurality of encoded image slices that corresponds to the redundantly-encoded regions.

22. (Previously Presented) The apparatus of claim 21, wherein the slice decoding unit comprises:

an entropy-decoding portion which entropy-decodes the encoded image slices according to the position and size information of the slices decoded from the picture header information;

an inverse-transform quantization portion which performs inverse-quantization of the entropy-decoded image slices, performs inverse-transform of the inversely-quantized image data into a temporal domain, and generates temporal/spatial predictively-encoded image data; and

an image restoration portion which restores the image by compensating the temporal/spatial predictively-encoded image data.

23. (Canceled).

24. (Currently Amended) The apparatus of claim **[[**23**]]** 21, wherein, when errors occur in decoding an encoded image slice that corresponds to a redundantly-encoded region, the image construction unit constructs the decoded image using the image data decoded from another one of the plurality of encoded image slices that corresponds to the redundantly-encoded region.

25. (Previously Presented) The apparatus of claim 22, wherein, when errors do not occur when decoding the plurality of encoded image slices that correspond to a redundantly-encoded region, the image construction unit constructs

the decoded image using the image data decoded from one of the encoded image slices that corresponds to the redundantly-encoded region which was encoded with a smallest quantization interval.

26. (Currently Amended) A method for redundantly encoding an image, the method comprising:

(a) dividing image data of an image into a plurality of regions and determining which of the regions are to be redundantly encoded, and determining ~~structures of~~ one of a plurality of structures for each of a plurality of slices to be used in encoding the regions of the image;

(b) allocating each region of [[an]] the image to at least one of the slices according to the slice structures, wherein each of the regions to be redundantly encoded is allocated to more than one of the slices;

(c) encoding picture header information comprising information required to decode encoded slices of the image; and

(d) encoding the allocated image regions into encoded slices according to the picture header information, wherein the regions allocated to be redundantly encoded are encoded into more than one encoded slice; and

wherein the slice structure corresponds to a shape of each of the plurality of slices.

27. (Previously Presented) The method of claim 26, wherein in (a), each slice structure comprises a series of macroblocks.

28. (Previously Presented) The method of claim 26, wherein in (a), the image is divided into at least one first rectangular region and a second region, and the structures of the slices are determined so that each of the first and second regions is included in at least one independent slice.

29. (Previously Presented) The method of claim 26, wherein in (a), each slice structure comprises a set of macroblocks at certain positions of the image.

30. (Previously Presented) The method of claim 26, wherein in (a), the structures of the slices in which the image data will be encoded are determined to be identical structures.

31. (Previously Presented) The method of claim 26, wherein in (a), the structures of the slices in which the image data will be encoded are determined to be non-identical structures.

32. (Previously Presented) The method of claim 26, wherein in (a), regions, predetermined by a user as an important region from the image, are determined as the regions to be redundantly encoded.

33. (Previously Presented) The method of claim 26, wherein in (a), the regions to be redundantly encoded are determined by detecting regions where motions are actively performed, from the image.

34. (Previously Presented) The method of claim 26, wherein in (a), an amount of the regions to be redundantly encoded is determined according to an error rate and a transmission bandwidth which occur in a transmission environment of the encoded slices, and an encoding efficiency of an encoder for encoding the slices.

35. (Previously Presented) The method of claim 26, wherein (a) comprises:

determining the structures of the plurality of slices to be used for image encoding; and

determining positions and amount of the regions to be redundantly encoded from the image using the plurality of slices.

36. (Previously Presented) The method of claim 26, wherein in (b), sizes of the plurality of slices are determined according to an amount of the regions to be redundantly encoded.

37. (Previously Presented) The method of claim 26, wherein in (b), the image data are allocated to the slices so that each of the slices includes image data of the regions to be redundantly encoded and image data of regions not to be redundantly encoded.

38. (Original) The method of claim 26, wherein in (b), the image data are allocated to the slices so that at least one slice includes image data of only a region to be redundantly encoded.

39. (Previously Presented) The method of claim 26, wherein in (c), the picture header information containing structure, position, and size of each slice is encoded.

40. (Previously Presented) The method of claim 26, wherein (d) comprises:

generating for each of the slices a slice header comprising information used to encode macroblocks of the slice according to the picture header information;

temporal/spatial–predictively encoding the allocated image regions into the encoded slices of the image;

transforming the temporal/spatial predictively-encoded slices into a frequency domain and quantizing data of the transformed slices; and

entropy-encoding the quantized data.

41. (Original) The method of claim 40, wherein the slice header includes flag information which indicates whether the slice to be encoded includes only regions to be redundantly encoded.

42. (Canceled)

43. (Previously Presented) The method of claim 26, wherein in (d), each of the redundantly-encoded slices are quantized at different quantization intervals.

44. (Previously Presented) The method of claim 26, wherein in (d), among two slices including the image data of the regions to be redundantly encoded, only main information containing a macroblock header and a motion vector of the regions to be redundantly encoded is encoded in a first slice, and all information of the regions to be redundantly encoded are encoded in a second slice.

45. (Previously Presented) The method of claim 26, wherein in (d), among two slices including the image data of the regions to be redundantly encoded, only main information containing a macroblock header, a motion vector, and a discrete cosine (DC) coefficient contained in a discrete cosine transform (DCT) coefficient of the regions to be redundantly encoded is encoded in a first slice, and all information of the regions to be redundantly encoded are encoded in a second slice.

46. (Currently Amended) A method for redundant image decoding, the method comprising:

(a) decoding picture header information including information required to decode encoded slices of an image divided into a plurality of regions, wherein at least one of the encoded image slices corresponds to each region of the image, and wherein a plurality of the encoded image slices corresponds to a redundantly encoded region of the image;

(b) determining structures and positions of the encoded image slices to be decoded according to the decoded picture header information;

(c) decoding [[an]] the encoded image slices according to the decoded picture header information; and

(d) disposing image data of each decoded slice according to the structure and position of the slices determined in (b) and restoring and outputting a decoded image; and

when the decoded picture header information for an encoded image slice indicates that the encoded image slice corresponds to redundantly-encoded regions of the image, the encoded image slice that corresponds to the redundantly-encoded regions is decoded if errors occur in decoding another one of the plurality of encoded image slices that corresponds to the redundantly-encoded regions.

47. (Previously Presented) The method of claim 46, wherein (c) comprises:

entropy-decoding the encoded image slices according to the position and size information of the slices decoded from the picture header information;

performing inverse-quantization of the entropy-decoded image slices, performing inverse-transform of the inversely-quantized image data into a temporal domain, and generating temporal/spatial predictively-encoded image data; and

restoring the image by compensating the temporal/spatial predictively-encoded image data.

48. (Canceled).

49. (Currently Amended) The method of claim **[[48]]** 46, wherein in (d), when errors occur in decoding an encoded image slice that corresponds to a redundantly-encoded region, the image is restored using the image data decoded

from another one of the plurality of encoded image slices that corresponds to redundantly-encoded region.

50. (Previously Presented) The method of claim 46, wherein in (d), when errors do not occur when decoding the plurality of encoded image slices that correspond to a redundantly-encoded region, the image is restored using the image data decoded from one of the encoded image slices that corresponds to the redundantly-encoded region which was encoded with a smallest quantization interval.

51. (Previously Presented) A computer readable medium encoded with a computer program comprising computer-executable instructions for executing the method for redundant image encoding of claim 26.

52. (Previously Presented) A computer readable medium encoded with a computer program comprising computer-executable instructions for executing the method for redundant image decoding of claim 46.